

Five Points Fuels Reduction Project

Aquatic Biological Evaluation (Fish & Aquatic Invertebrates)

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Contents

Introduction.....	3
Analysis Area.....	3
Field Surveys	3
Existing Conditions.....	4
Design Features and Mitigation Measures.....	5
Effects Analysis	6
Cumulative Effects.....	7
References.....	9
Appendix A -Complete List of Wallowa-Whitman Aquatic Sensitive Species.....	10
Appendix B – Summary of Effects Determinations for Aquatic Species	11
Appendix C – Five Points Creek Spawning Surveys.....	12

Introduction

This aquatic specialist report satisfies requirements of Forest Service Manual 2672.4 requiring the Forest Service to review all planned, funded, executed or permitted programs and activities for possible effects on proposed, endangered, threatened or sensitive species by completing a Biological Evaluation (BE). The Region 6 Regional Forester Special Status Species List was last updated in March 2019. The BE process is intended to review the Five Points Fuels Reduction Project in sufficient detail to determine effects of alternatives on species in this evaluation and ensure proposed management actions would not:

- likely jeopardize the continued existence, or cause adverse modification of habitat, for a species that is proposed (P) or listed as endangered (E) or threatened (T) by the USDI Fish and Wildlife Service or NOAA National Marine Fisheries Service; or
- contribute to the loss of viability for species listed as sensitive (S) by USDA Forest Service, Region 6, or any native or desired, non-native species; nor cause any species to move toward federal listing (FSM 2672.4).

The following sources were used during the prefield review phase to determine the presence or absence of aquatic PETS species in the effects area for the Five Points Project:

- Wallowa-Whitman NF GIS database
- Regional Forester's (R6) sensitive animal list (2019)
- ODFW stream survey and fish survey reports
- Forest Service stream survey reports, Wallowa-Whitman NF (WWNF), Baker City, OR
- Oregon Natural Heritage Program (ORNHP) database
- Natural Heritage Conservation database (Biosource)
- Oregon Native Fish Status Report (2005)

Analysis Area

The analysis area for aquatic species is the same as the analysis area used for the direct and indirect effects analysis to aquatic habitat in the Five Points project area.

Time frames for direct, indirect, and cumulative effects to aquatic species are the same as those used for the direct/indirect effects to aquatic habitat analysis: 1) short-term, 0 - 5 years; 2) mid-term, 5 - 10 years; and 3) long-term, >10 years.

Field Surveys

Field surveys for aquatic resources have been completed in Five Points Creek by both the Forest Service and the Oregon Department of Fish and Wildlife (ODFW). Level II surveys were completed by the Forest Service in 2010 and 2018. The Forest Service also surveyed the project area for fish distribution in 2020 to determine stream categories for Riparian Habitat Conservation Areas (RHCAs). GIS layers were updated with the data from field surveys.

Riparian Management Objectives

The WWNF Forest Plan was amended in 1995 with the PACFISH and INFISH Forest Plan amendments. PACFISH/INFISH identified Riparian Habitat Conservation Areas (RHCAs) which are areas in

watersheds that are most sensitive to management activities (Table 1). Critical aquatic habitat elements as defined by the Wallowa-Whitman National Forest Land and Resource Management Plan (1990), including the 1995 PACFISH amendment and the 1998 Biological Opinion (BO) for the Forest Plan include: 1) pool frequency, 2) water temperature, 3) large woody debris, 4) bank stability, 5) width to depth ratio, and 6) fine sediment levels. These habitat elements, referred to as Riparian Management Objectives (RMOs), are important indicators of aquatic habitat function and health. These RMOs were designed for fish bearing streams in anadromous watersheds (Table 2). Standards and guidelines were developed not to retard attainment of these RMOs in forest management activities.

Table 1. Definitions of PACFISH/INFISH Category, Forest Plan Stream Class and RHCA Widths in linear feet

Definitions and RHCA Width	Fish Bearing	Permanently Flowing and non-Fish Bearing	Ponds, lakes, reservoirs and wetlands > 1 acre	Seasonally flowing or intermittent streams, wetlands < 1 acre, landslides and landslide-prone area
INFISH	Category 1	Category 2	Category 3	Category 4
Forest Plan	Class I, II	Class III	N/A	Class IV
RHCA Width	300'	150'	150'	100'

Level II surveys are used to determine whether the PACFISH Interim Riparian Management Objectives (RMOs) are being met for anadromous habitat (USDA 1995). See Table 2 below for general habitat conditions/objectives for RMOs.

Table 2. Summary of Interim Riparian Management Objectives (RMOs) (USDA 1995).

Habitat Feature	RMOs									
Pool Frequency (all systems)	Varies by channel width, see below.									
<i>Wetted Width in Feet</i>	10	20	25	50	75	100	125	150	200	
<i>Number of Pools Per Mile</i>	96	56	47	26	23	18	14	12	9	
Water Temperature (all systems)	Compliance with state water quality standards, or maximum <68°F/20°C									
Large Woody Debris (pieces per mile) (forested systems)	East of Cascade Crest in Oregon, Washington and Idaho. >20 pieces >12-inch diameter; >35-foot length.									
Bank Stability	>80% stable									
Lower Bank Angle (Undercut Banks) non-forested system	>75 percent of banks with <90-degree angle									
Wetted Width/Depth Ratio	<10 (mean wetted width divided by mean depth)									

Existing Conditions

The results of Level II surveys on Five Points Creek found improvements in RMOs from 2010 to 2018. During this time, restoration work was completed by placing logs and increasing slow water habitat. In

2010, Five Points Creek did not meet objectives for pools per mile, width/depth ration (W/D) and large woody debris (LWD). However, in 2018 LWD increased to well over RMO standards. Pools frequency also increased to almost double the 2010 survey, but do not currently meet objectives. W/D ratios do not meet RMOs as well, but are within the range of averages for the Rosgen Channel type. Five Points Creek met RMOs for fine sediment (<5.7mm) of less than 12% during both years (Table 3).

Table 3. Results from 2010 and 2018 Level II surveys in Five Points Creek.

Stream/Year Surveyed	Survey Length (miles)	Pools (#/mile)	Wetted Width (ft)	Stable Banks (%)	W/D Ratio	LWD (pcs/mi)	Fine Sediment <5.7mm
Five Points Cr./2010	6.9	17	13	98	29	10	8%
Five Points Cr./2018	6.2	32	15	92.5	32	85	4%

The Forest Service has long term stream temperature data measured within the project area. Over the past 13 years, the site met RMO temperature guidelines of 68°F twice, in 2011 and 2020. Along with RMOs, the Oregon Department of Environmental Quality (ODEQ) sets state water quality standards based on the maximum 7-day running average. The water quality standard for Five Points Creek is for core-coldwater habitat at 60.8°F. Five Points Creek has not met this standard in the last thirteen years. The results of the temperature data analysis are found in Table 4.

Table 4. Results of long-term stream temperature monitoring within the Five Points Project Area

Location	Maximum Weekly Average Temperature (F°)												
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Five Points Cr. In Project Area	70.4	72.8	70.1	67.1	69.6	70.7	70.1	73.8	70.7	71.5	71.4	69.1	67.6

Steelhead spawning surveys in Five Points Creek have found varying amounts of redds and adults throughout the project area. This reach is an index reach for ODFW and will continue to be surveyed during and after project implementation. The amount of redds in the index reach varied between 6 in 2019 and 116 in 2015 (see Appendix C). The range of values can partially be explained by surveying conditions, instream conditions, and migration conditions.

During fish distribution surveys, streams within the project area where classified into the four different RHCA categories (Table 1). During these surveys, 12.4 miles of streams in the project area were designated Category 1 meaning these streams are fish bearing with permanent or intermittent streamflow. Of the total miles of Category 1 streams, 5.6 of these miles are Five Points Creek. There were also 4 miles of Category 2 streams in the project area and 18.9 miles of Category 4 streams in the project area.

Design Features and Mitigation Measures

The following bullets present a summary of the design features and mitigation measures applicable to aquatic resources in the Five Points Fuels Reduction Project.

- Follow Forest Plan standards and guidelines as amended by PACFISH-INFISH for protecting RHCA's from ground disturbing activities related to timber harvest, road maintenance, and prescribed fire apply to this project. Prescribed fire ignition will not occur within RHCA's, but fire may back into RHCA's.

- Avoid impacting live or dead trees in RHCAs. If safety or other hazardous trees are observed in RHCAs during implementation, work with a District Fish Biologist or Hydrologist to place the tree in the stream to help move large wood RMOs towards Forest Plan standards.
- Refueling, repair, and maintenance of equipment would be done at landings or on forest roads outside of RHCAs. Fuel would not be stored within any RHCA. Timber sale purchaser would prepare a spill containment plan that would ensure that spilled fuel would not leave the site of the spill.
- During road maintenance, limit vegetation modification to the road prism, road surface, and ditch lines to that work necessary to maintain a safe travel way and functional drainage system. Side cast of materials would not occur where these materials could be directly or indirectly introduced into a stream. Temporary culverts will be installed during dry conditions. After completion of the project, these structures will be removed and hauled from the project area. Banks of crossings will be reshaped to match undisturbed sections adjacent to the crossing.

Effects Analysis

Steelhead trout (*Oncorhynchus mykiss*) are present in the project area and are a threatened species under the Endangered Species Act. Designated critical habitat for steelhead trout, chinook salmon (*Oncorhynchus tshawytscha*) and bull trout (*Salvelinus confluentus*) is present in Five Points Creek. Bull trout and chinook salmon have not been recently observed within the project area, but effects to their habitat are analyzed in this report due to the presence of critical habitat.

Redband trout (*Oncorhynchus mykiss*), Western ridged mussels (*Gonidea angulata*) and Pacific lamprey (*Entosphenus tridentatus*) are on the Regional Forester's Sensitive Species List for the Wallowa-Whitman National Forest (See Appendix A for complete list). Pacific lamprey were reintroduced into Five Points Creek in 2019. Western ridged mussels are suspected in the project area, but have not been observed. Since Western Ridged Mussel habitat is present in the project area, they will be treated as if they were present. Shortfaced Lanx (*Fisherola nuttalli*), Columbia Pebblesnail (*Fluminicola fuscus*) and a freshwater snail (*Taylorconcha insperata*) are Regional Sensitive species who have not been observed, do not have habitat present in the project area and were not analyzed for this Biological Evaluation. The Five Points project will have no adverse effects on aquatic sensitive species and no effect on ESA-listed fish species or their critical habitat in the analysis area. Implementing project mitigation measures will maintain current sediment regimes and water quality, protect fish habitat and maintain stream temperature through protection of riparian vegetation.

Table 5. Effects to Forest Service Sensitive Aquatic Species and listed ESA species known or suspected in the Five Points Analysis Area.

Aquatic Species	Documented in Analysis Area	Habitat	Effect ¹	Comments and Rationale
Steelhead Trout (<i>Oncorhynchus mykiss</i>)	Yes	Present in Five Points Creek including both juvenile rearing and adult spawning individuals.	NE	No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted during implementation of project.
Redband Trout (<i>Oncorhynchus mykiss</i>)	Yes	Broadly distributed, occupying wherever adult steelhead occupy habitat and above	NI	No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted

		barriers to steelhead.		during implementation of project.
Western Ridged Mussel (<i>Gonidea angulata</i>)	Suspected	Broadly distributed west of the Continental Divide, CA to BC. It is mainly distributed east of the Cascades.	NI	Western ridge mussels have not been observed in project area. They are common in stable stream reaches. Maintenance of RHCAs will maintain stable stream conditions and habitat. This will maintain stream temperature and sedimentation levels.
Pacific lamprey (<i>Entosphenus tridentatus</i>)	Habitat Present	Lamprey are found in the Grande Ronde River and have been translocated into the Five Points Creek and are documented in the Project Area.	NI	Pacific Lamprey were reintroduced into Five Points Creek in 2019. No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted during implementation of project.
Steelhead Trout (<i>Oncorhynchus mykiss</i>) Spawning and Rearing Critical Habitat	Designated	Five Points Creek is designated spawning and rearing habitat.	NE	No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted during implementation of project. Stream buffers will maintain stream shading and sources for large woody material.
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) Spawning and Rearing Critical Habitat	Designated	Five Points Creek is designated spawning and rearing habitat.	NE	No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted during implementation of project. Stream buffers will maintain stream shading and sources for large woody material.
Bull Trout (<i>Salvelinus confluentus</i>) Spawning and Rearing Critical Habitat	Designated	Five Points Creek is designated spawning and rearing habitat.	NE	No entry to RHCAs for thinning and prescribed burn ignition. No new roads will be built in RHCAs. Sedimentation and stream temperature should not be impacted during implementation of project. Stream buffers will maintain stream shading and sources for large woody material.

Effects Determinations: NI = No Impact, MIIH = May Impact Individuals or Habitat, NE = No Effect, NLAA = Not Likely to Adversely Affect, LAA = Likely to adversely Affect, BI=Beneficial Impact

Cumulative Effects

Road Maintenance – there is ongoing road maintenance in and adjacent to the project area. This may result in increases in localized disturbances. Road maintenance design criteria should mitigate effects to streams from sedimentation. Long term road maintenance reduces the likelihood of sediment delivery to streams. There will be no new system roads or temporary roads in RHCAs.

Grazing – there are active grazing allotments within the project area. It is possible that activities proposed under this project (e.g. harvest and prescribed burning) could open upland areas making these areas more desirable to livestock. It is not expected that this project will result in cumulative effects from potential

changes in grazing patterns due to the design criteria in place. Additionally, one half mile of enclosure fencing was installed in 2018 providing protection for sensitive floodplain area around Camp 1 on Five Points Creek. Riparian conditions will be maintained through implementation of RHCA no activity buffers.

Other Vegetation and Fuels Management—within the project area, other approved vegetation management projects (Sugar EA) have occurred with similar anticipated impacts to aquatic species. This project and Sugar EA share similar aquatic species project design features. The Five Points project does increase the no activity buffer to the full RHCA widths. There are also proposed fuels projects on adjacent private land and on the Mount Emily Recreation Area, but those projects should have a beneficial impact on aquatic species due to the decreased risk of severe fire in the watershed.

Climate Change- Rising air temperatures and changes to precipitation regimes can be expected effects of climate change within the project area. This may increase the likelihood of severe fire throughout the project. However, implementation of thinning and prescribed fire should reduce the probability of severe fire in the project area. Severe fire can lead to sedimentation and increase stream temperature. Also, allowing backing low to moderate intensity fire into RHCHAs will create patchy understory conditions and reduce the likelihood of severe fire within the RHCHAs. Maintaining overstory riparian vegetation will allow for continued stream shading which mitigates the impacts to rising temperatures (Wondzell et al, 2019). Large scale riparian plantings occurred in 2015 and 2016 as a part of the Five Points fish habitat restoration project. Shading is expected to increase in the near term and be maintained moving forward. The projects actions should maintain riparian conditions and increase resiliency to climate change.

Overall, the cumulative impact of these activities upon aquatic species are expected to be low.

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Appendix A -Complete List of Wallowa-Whitman Aquatic Sensitive Species.

Table 6. Habitat Descriptions for Aquatic R6 Sensitive Species (2019 List) for the Wallowa-Whitman NF.
D=Documented, S=Suspected

Common Name	Scientific Name	Status on WWNF	Habitat
Shortface Lanx (Giant Columbia River limpet)	<i>Fisherola nuttalli</i>	D	Found in unpolluted rivers and large streams, in highly oxygenated, swift-flowing, cold water on stable boulder or bedrock substrates, often in the vicinity of rapids. Macrophytes and epiphytic algae generally rare to absent at sites for the species. Not found in locations with sediment or silt deposition. Documented in Snake River (Neitzel et al, 1992).
Redband trout	<i>Oncorhynchus mykiss</i>	D	Redband, a resident form of steelhead, have similar habitat preferences, and also occupy small, colder headwater tributaries. Broadly distributed, occupying wherever adult steelhead occupy habitat and above barriers to steelhead (Currans et al, 2009).
Pacific lamprey	<i>Entosphenus tridentatus</i>	D	Post spawning ammocoetes burrow for 5 -7 years in areas of low velocity and fine substrates. Adults spawn in riffles after returning from the ocean. Lamprey are present in the Grande Ronde River and have been reintroduced into several streams on the Wallowa Whitman National Forest including Five Points Creek (Clemens et al, 2013).
Columbia Pebblesnail (Ashy Pebblesnail)	<i>Fluminicola fuscus</i>	D	Found in larger tributaries and rivers, on upper surfaces of stable rocks, boulders and bedrock outcrops in fast current, in relatively shallow water. Species requires cold water with high oxygen content, so is not found behind impoundments, or where water is warm, slow, nutrient-enriched or turbid. Generally found in areas with few aquatic macrophytes or epiphytic algae. Documented in Snake River (Neitzel et al, 1992).
A Freshwater snail	<i>Taylorconcha insperata</i>	S	Rivers, tributary deltas and back eddies, cobble, small boulder substrates with moderate periphyton densities and detrital deposition (Richards et al. 2005). Documented in the Snake River.
Western Ridged Mussel	<i>Gonidea angulata</i>	D	Western ridged mussels occur in streams of all sizes and are rarely found in lakes or reservoirs. They are found mainly in low to mid-elevation watersheds, and do not often inhabit high elevation headwater streams where western pearlshells are found. They often share habitat with the western pearlshell throughout much of the Pacific Northwest. They inhabit mud, sand, gravel, and cobble substrates. They are more tolerant of fine sediments than western pearlshells and occupy depositional habitats and banks. They can withstand moderate amounts of sedimentation, but are usually absent from habitats with highly unstable or very soft substrates. Cursory evidence suggests that western ridged mussels are more pollution-tolerant than other native mussels (Brim Box et al, 2006).

Appendix B – Summary of Effects Determinations for Aquatic Species

Table 7. Occurrence of aquatic species with special management status in the Five Points project area and effects determinations.

Common Name	Scientific Name	Status	Occurrence		Effects Determination
			WWNF	Five Points Analysis Area	
SR Steelhead	<i>Oncorhynchus mykiss</i>	ESA Threatened, WWNF MIS	Present	Present	NE
Critical Habitat – SR Steelhead		Designated	Present	Present	NE
SR Spring Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	ESA Threatened	Present	Not Present	NE
Critical Habitat – SR Spring Chinook Salmon		Designated	Present	Present	NE
SR Fall Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	ESA Threatened	Present	Not Present	NE
Critical Habitat – SR Fall Chinook Salmon		Designated	Present	Not Present	NE
CR Bull Trout	<i>Salvelinus confluentus</i>	ESA Threatened	Present	Not Present	NE
Critical Habitat – CR Bull Trout		Designated	Present	Present	NE
Inland Redband Trout (all stocks)	<i>Oncorhynchus mykiss</i>	R-6 Sensitive, WWNF MIS	Present	Present	NI
Western Ridge Mussel	<i>Gonidea angulata</i>	R-6 Sensitive	Present	Habitat Present	NI
Shortface Lanx (Giant Columbia River limpet)	<i>Fisherola nuttalli</i>	R-6 Sensitive	Present	Not Present	NI
Pacific Lamprey	<i>Entosphenus tridentatus</i>	R-6 Sensitive	Present	Present	NI
Columbia Pebblesnail	<i>Fluminicola fuscus (=columbianus)</i>	R-6 Sensitive	Present	Not Present	NI
A Freshwater snail	<i>Taylorconcha insperata</i>	R-6 Sensitive	Suspected	Not Present	NI

Effects Determinations: NI = No Impact, MIH = May Impact Individuals or Habitat, NE = No Effect, NLAA = Not Likely to Adversely Affect, LAA = Likely to adversely Affect

